

## **REMARKS**

Claims 1-33 were originally presented. Claims 7-20 and 27-33 were previously canceled in response to a restriction requirement. Claims 34-35 are newly added. Thus, claims 1-6, 21-26 and 34-35 are all the claims pending in the application. Claims 1-6 and 21-26 stand rejected as being directed to non-statutory subject matter and on prior art grounds. Applicants respectfully traverse these rejections based on the following discussion.

### **I. Rejection Under 35 U.S.C. §101**

[0001] Claims 1-6 and 21-26 stand rejected under 35 U.S.C. §101 for being directed to non-statutory subject matter. These rejections are traversed as explained below.

[0002] Section 101 of title 35, United States Code, provides as follows: “Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title. The term “process” means process, art, or method, and includes a new use of a known process, machine, manufacture, composition of matter, or material (see 35 U.S.C 100(b)). The Applicants submit that the claimed invention is a process (i.e., a method) and, thus, falls into one of the four categories of invention as defined by Congress.

[0003] It is generally understood that to establish utility under 35 U.S.C. §101 method inventions as a whole must produce a “useful, concrete and tangible result.” (see *State Street*, 149 F.3d at 1373-74, 47 USPQ2d at 1601-02). Additionally, *AT&T Corp v. Excel Communications, Inc.* 172 F.3d 1352, 1358-59, 50 USPQ2d 1447, 1452 (Fed. Cir. 1999) provides that physical transformation “is not an invariable requirement, but merely one example, of how a mathematical algorithm [or law of nature] may bring about a useful application.” If the Examiner determines that there is no physical transformation, additional review is required to determine if the claim provides a useful, tangible and concrete result. The review by the Examiner should focus not on each step, but on whether the final result achieved by the claimed invention is “useful, concrete and tangible” (see *AT&T* 172 F.3d at 1358-5).

[0004] The Applicants submit that the results of the method embodiments claimed are

“useful, tangible and concrete”. Specifically, each of the independent claims provides for a computer-implemented method for determining a supply chain plan. The limiting features in claim 1 (and similarly in claim 21) comprise: (1) “creating, from a single demand record for a demand, a plurality of distinct demand records for said demand, wherein each of said distinct demand records for said demand has a different demand date”; (2) “performing core processing to create said supply chain plan, wherein said core processing considers all of said distinct demand records for said demand when creating said supply chain plan”; and (3) “outputting a report based on results of said core processing”. As claimed, a credible, specific, and substantial use for the method (namely, creation of a supply chain plan using core processing that considers multiple distinct demand records for the same demand, those demand records having different demand dates) would be readily apparent to one skilled in the art. This use is also clearly set out in the specification. That is, as discussed in paragraphs [0077] and [0098] of the specification (as published), the resulting supply chain plan of the present invention “can lead to more efficient allocation of assets and resources and substantially improved customer service metrics”.

[0005] Furthermore, the Applicants submit that, in addition to being useful, the results of the method embodiments are also “tangible” and “concrete”. Specifically, the claim limitations of “create a supply chain plan” and “outputting a report” are beneficial real-world results of performing the method of the invention (i.e., they are tangible and not abstract results, see *Gottschalk v. Benson*, 409 U.S. 63, 71-72, 175 USPQ 673, 676 (1972)). That is, as the method is performed, core processing creates a supply chain plan and also outputs a report based on the results of the core processing. The process steps are not abstract or theoretical. Additionally, the claim limitations of “creating, from a single demand record for a demand, a plurality of distinct demand records for said demand, wherein each of said distinct demand records for said demand has a different demand date”, “performing core processing to create said supply chain plan, wherein said core processing considers all of said distinct demand records for said demand when creating said supply chain plan”, and “outputting a report based on results of said core processing” are substantially repeatable (i.e., concrete, see *In re Swartz*, 232 F.3d 862, 864, 56 USPQ2d 1703, 1704 (Fed. Cir. 2000)). That is, when the computer, which is used to implement the method, receives each new single demand record for a demand, it can

create multiple discrete demand records, with different demand dates, for the same demand; perform core processing, considering all the discrete demand records for the same demand, to create a new supply chain plan; and output a report based on the results of the core processing.

[0006] Therefore, independent claims 1 and 21 are directed to statutory subject matter under 35 U.S.C. §101. Further, dependent claims 2-6 and 21-26 are similarly patentable. In view of the foregoing, the Examiner is respectfully requested to reconsider and withdraw this rejection.

## **II. The Prior Art Rejections**

[0007] Claims 1-4 and 6 stand rejected under 35 U.S.C. §102(e) as being anticipated by Crampton, et al. (U.S. Patent No. 6,898,472), hereinafter referred to as Crampton. Claims 5 and 21-26 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Crampton, in view of Moodie (“Demand Management: The Evaluation of Price and Due Date Negotiation Strategies Using Simulation”). Applicants respectfully traverse these rejections based on the following discussion.

[0008] The Applicants submit that the cited prior art reference does not teach or suggest the following limitations of amended independent claim 1 (or the similar features of independent claims 21): (1) “creating, from a single demand record for a demand, a plurality of distinct demand records for said demand, wherein each of said distinct demand records for said demand has a different demand date”; and (2) “performing core processing to create said supply chain plan, wherein said core processing considers all of said distinct demand records for said demand when creating said supply chain plan”.

[0009] In rejecting claim 1, the Office Action provides that Crampton discloses “creating, from a single demand record, a plurality of distinct demand records, wherein each of said distinct demand records has a different demand date (see col. 12: In. 11-45, disclosing determining a range of start dates, need dates, and preference dates for an order; col. 7: In. 63 - col. 8: In. 3; col. 10: In. 42-55; figures 7 A-D)”.

[0010] Pre the Abstract, Crampton teaches a system and method for planning the use of supply chain network resources by processing one or more groups of orders. The system and

method is an attribute based rather than an order or stock keeping unit based system and method allowing for greater flexibility and improved simplicity in obtaining planning solutions. The system and method defining stock keeping unit attribute definition groups, which allows orders to be prioritized and organized into slices of orders such that an optimal planning solution is generated.

[0011] Crampton uses a number of acronyms. An SKU is a stock keeping unit (see col. 8, lines 38-39). Col. 9, lines 5-11, further provides that each SKU associates an Item and a Location, that the SKU has predefined and user defined attributes, and that the SKU may be raw material, work-in-process (“WIP”), finished good, etc. Col. 8, lines 42-63, provides that a SAD Group is a SKU attribute description group and that each SAD Group can have a list of SKUs and a list of attribute values for some or all of the attributes associated with orders. Col. 8, lines 18-29, provides that an order consists of defined attributes (E.g., an identifier, SKU, quantity, start date, need date, customer, priority, and effective need date).

[0012] Col. 12, lines 11-45, of Crampton discusses particularly the various attributes which may be used to define a SAD group. These attributes include, for example, an item identifier, planned location, requested location, start date-begin, start date-end, need date-begin, preference date end, minimum quantity, maximum quantity, minimum priority, maximum priority, customer name, customer location, SKU and any other user defined attributes useful for implementing the APB system 100. Col. 7, line 63 - col. 8, line 3, refers to a particular attribute that may be assigned to a SAD group, namely “maximum earliness” or the time interval before the need date that the requested good will be accepted.

[0013] Col. 10, lines 42-55, refers generally to the idea that a reliable planning system will be able to accommodate idiosyncrasies, rules and goals of many types of manufacturers. For example, it should be able to accommodate “just in time” type manufacturer and earliest date possible type manufactures. Thus, it would be desirable to have a system that recognizes the particular needs of a manufacturer. The invention of Crampton attempts to do this through the use of SAD groups.

[0014] More specifically, col. 11, lines 20-52, discusses how such SAD groups are used in the implementation of the system 100. Specifically, the system of Crampton organizes SKUs

and user defined attribute values into SKU attribute description groups (i.e., SAD groups). A SAD group for orders will be associated with any orders having at least the same attributes that define the SAD group. As discussed above, the cited portion of col. 12 provides a detailed listing of exemplary attributes that can be used to define a SAD group. Orders that meet the conditions defined by a SAD group are considered to be part of that group (i.e., orders which have the attributes for a given SAD group are considered to be part of that group). For example, if a SAD group has defined attributes of Sedan and Atlanta, then an order from Atlanta for a sedan with power windows would be a part of that SAD group. The system uses the SAD groups to, for example, define attribute-sensitive bills of materials for orders, define attribute sensitive inventory, define attribute sensitive substitutions, etc.

[0015] Thus, the cited portions of Crampton, discussed above, essentially discloses sorting orders into groups based on defined attributes and these defined attributes may include various dates that may be mentioned in the orders. However, neither the cited portions, nor any other portion, of Crampton discloses “creating, from said single demand record for a demand, a plurality of distinct demand records for said demand, wherein each of said distinct demand records for said demand has a different demand date”, as claimed. That is, Crampton discloses sorting orders based on the attributes of the orders, including but not limited to demand date(s) contained in the orders. However, it does not disclose taking a single order that references different demand dates and, for subsequent processing, turning it into multiple distinct orders, each having different demand dates.

[0016] It should be noted that figures 7A-7D are also cited as disclosing this limitation. However, Figures 7A-7D are exemplary timelines depicting inventory levels and need quantity over a period of time. It is unclear how such time lines could illustrate the idea of creating distinct demand records with different demand dates from a single demand record.

[0017] In rejecting claim 1, the Office Action further provides that Crampton discloses “performing core processing to create said supply chain plan, wherein said core processing considers all of said distinct demand records (see col. 10: In. 5-55; col. 13: In. 54 - col. 14: In. 42; col. 16: In. 22 - col 17: In. 29; col. 21: In. 35-col. 22: In. 10).” The Applicants respectfully disagree.

[0018] Col. 10, lines 5-24, discusses an exemplary situation where an automaker has multiple customers who submit orders. A plan is generated for optimal use of the resources for fulfilling multiple orders. Each order contains relevant information that may be used to create certain parameters when scheduling orders. Col. 10, lines 25-41, discusses that ideally a planning system will accommodate important factors when planning (e.g., accommodate already scheduled orders before attempting to fulfil new orders). As discussed above, col. 10, lines 42-55, refers generally to the idea that a reliable planning system will be able to accommodate idiosyncrasies, rules and goals of many types of manufacturers. For example, it should be able to accommodate “just in time” type manufacturer and earliest date possible type manufactures. Thus, it would be desirable to have a system that recognizes the particular needs of a manufacturer. The invention of Crampton attempts to do this through the use of SAD groups.

[0019] Col. 13, line 54 - col. 14, line 42, describes the processes 200 and 220 of Crampton for creating a plan or modifying an existing plan for utilizing network resources in order to fulfill demand. 100 is an initializing flow process and 220 is an order planning flow process. Process 200 comprises loading of a model 202, initializing buckets 204, placing initial assignments and allocating materials 206, and creating a temporary table of unplanned orders. Process 220 comprises selecting a group of orders associated with a particular SAD group 222, a window is loaded with the selected group 224, each order in the window is prioritized 226 and highest priority order not planned is planned 228 iteratively, assignments are written 232, the temporary table is unloaded 234, and repeat for next group of orders.

[0020] Col. 16, line 22 – col. 17, line 29, simply refers in more detail to step 226 referenced above where each order in a window showing all orders in a selected SAD group are prioritized.

[0021] Figure 4 further defines the step 228 referenced above where the highest priority order not planned is planned. At step 402 the next priority order is selected for processing, and constraints and/or other rules are defined providing parameters for planning that selected order (see col. 21, lines 22-35). Col. 21, line 35-col. 22, line 10, describes how parameters defined in step 402 may affect the way a selected order is scheduled/planned.

[0022] Thus, the cited portions of Crampton, discussed above, essentially disclose

grouping multiple orders from the same or different customers by SAD group, prioritizing the orders within a SAD group, and processing each order within each SAD group individually in sequence based on priority. However, neither the cited portions, nor any other portion, of Crampton discloses “performing core processing to create said supply chain plan, wherein said core processing considers all of said distinct demand records for said demand when creating said supply chain plan”, as claimed. That is, Crampton recognizes that a single order may be associated with multiple different demand dates. However, Crampton does not, for processing purposes, create from the single order multiple distinct orders, each one being associated with a different one of the demand dates. Since Crampton does not create multiple distinct orders (i.e., multiple distinct demand records) from a single order (i.e., from a single demand record for a demand), it necessarily does not perform processing that “considers all of said distinct demand records for said demand”, as claimed.

[0023] It should be noted that in rejecting dependent claim 5 and similarly in rejecting independent claim 21, the Office Action acknowledges that Crampton does not disclose the claimed selecting process. Thus, the Office Action cites Moodie for the sole purpose of disclosing “using pricing to determine when to deliver an order (see at least figure 2).” The Applicants respectfully disagree and further submit that Moodie does not teach or disclose any of the distinguishing features of independent claims 1 and 21 as set out above.

[0024] It should be noted that in rejecting dependent claim 25, the Office Action acknowledges that neither of the cited prior art references disclose the claimed feature and further indicates that the use of linear programming to optimize production processes is well-known. However, the Office Action does not address the claimed feature of core processing “based on iterative solutions of a linear program.” That is, as claimed, the limitation goes beyond simply applying linear programming to optimize production processes to performing core processing based on the iterative solutions of such a linear program. The Applicants submit that this feature, as claimed, is neither well-known, nor taught by the prior art.

[0025] Therefore, the Applicants submit that amended independent claim 1 and 21 are patentable over the cited prior art reference. Further, dependent claims 2-6 and 22-26 are similarly patentable, not only by virtue of their dependency from a patentable independent claim,

but also by virtue of the additional features of the invention they define. Moreover, the Applicants note that all claims are properly supported in the specification and accompanying drawings, and no new matter is being added. In view of the foregoing, the Examiner is respectfully requested to reconsider and withdraw the rejections.

### **III. Formal Matters and Conclusion**

With respect to the rejections to the claims, the claims have been amended, above, to overcome these rejections. In view of the foregoing, Applicants submit that claims 1-6, 21-26 and 34-35, all the claims presently pending in the application, are patentably distinct from the prior art of record and are in condition for allowance. Therefore, the Examiner is respectfully requested to reconsider and withdraw the rejections to the claims and further to pass the above application to issue at the earliest possible time.

Should the Examiner find the application to be other than in condition for allowance, the Examiner is requested to contact the undersigned at the local telephone number listed below to discuss any other changes deemed necessary. Please charge any deficiencies and credit any overpayments to Attorney's Deposit Account Number 09-0456.

Respectfully submitted,

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